

VAF

INSTRUMENTS



Monitoring & Control Systems

107

Product Range

Viscosity

Oil Discharge

Liquid Flow

Shaft Power

Alarm Units

Custom Made

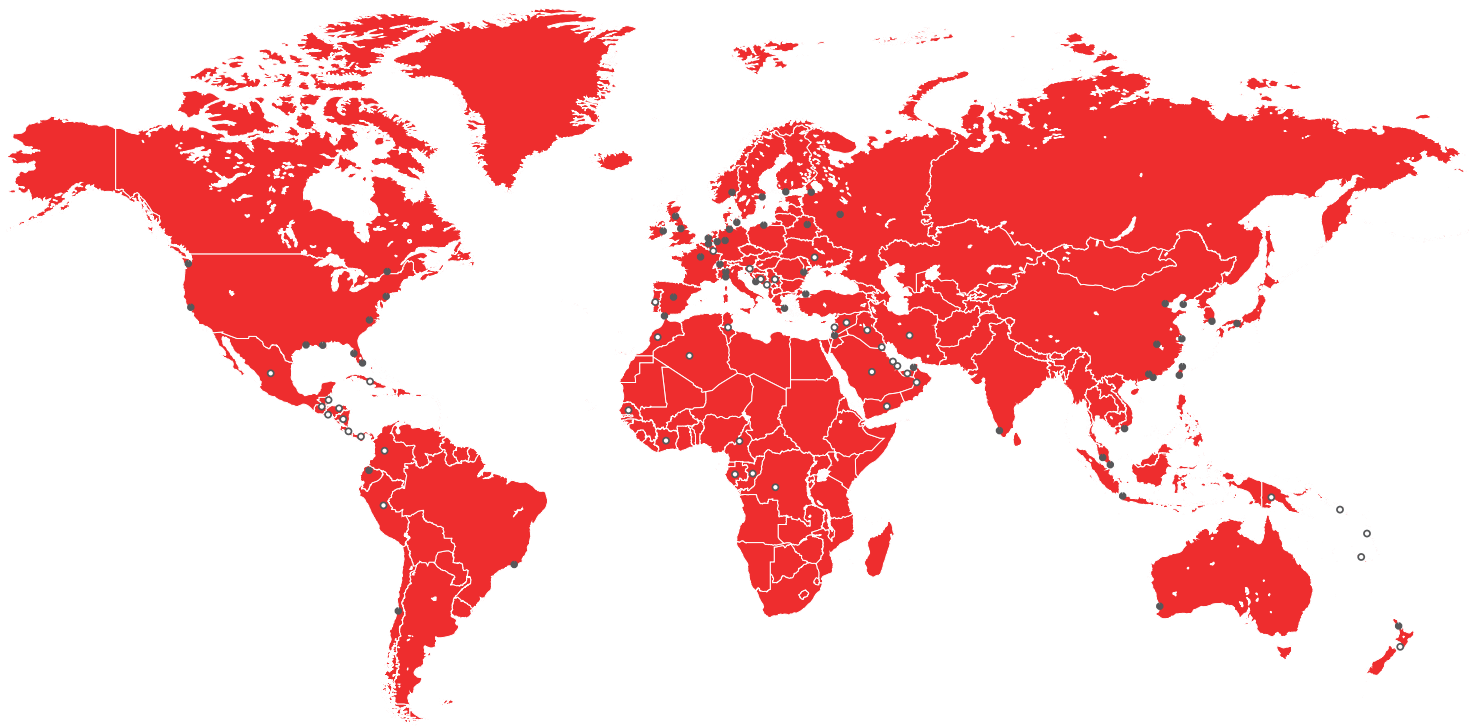
WWW.VAF.NL

TO BE
REALLY
SURE

Quality,
Reliability
and Flexibility
are some
of the main
ingredients
of our success
since 1938.

Worldwide sales & service network

Algeria	Luxemburg
Australia	Malaysia
Bahrein	Marocco
Belgium	Marshall Islands
Belize	Mexico
Bosnia en Herzegovina	Micronesia
Brazil	Montenegro
Canada	New-Caledonia
Caribbean	New-Zealand
Chili	Nicaragua
Colombia	Norway
Congo-Brazzaville	Ukraine
Congo-Kinshasa	Oman
Costa Rica	Panama
Croatia	Papua New Guinea
Denmark	Peoples Republic of China
Dubai	Peru
Ecuador	Poland
El Salvador	Portugal
Finland	Qatar
France	Romania
Gabon	Russia
Germany	Saudi-Arabia
Great Britain	Senegal
Greece	Servia
Guatemala	Singapore
Honduras	Slovenia
Hong Kong	Solomon Islands
India	South Korea
Indonesia	Spain
Iraq	Sweden
Iran	Switzerland
Ireland	Syria
Italy	Taiwan
Ivory Coast	Tunesia
Japan	Turkey
Jemen	United Arab Emirates
Jordan	USA
Cameroon	Vanuatu
Kuwait	Vietnam
Libanon	



Introduction

VAF Instruments is the most preferred supplier of the top 100 shipyards and market leader in maritime measurement systems today. Why? Because we continuously strive to improve our products and service in order to serve you better.

For one, VAF Instruments offers her customers the best, longest and most comprehensive guarantee in the maritime industry. Secondly, with a global service organisation, VAF Instruments offers a unique level of customer service. When you look for reliability and service, VAF Instruments is the logical choice.

Who is VAF Instruments?

VAF Instruments is the leading specialist for the development, manufacturing and world-wide sales of measurement and control systems. We supply both the marine- and process industry.

What do we offer?

VAF Instruments offers measurement and control systems for the marine and process industry.

Which customers do we serve?

Our instruments are used in a diversity of situations and by a variety of companies. Over 70% of the top 100 shipyards worldwide we call our clients. With most of them we have long established relationships.

Why choose VAF Instruments?

Our company is based on your success. Our processes and the way we do things are designed around five guiding principles. These five principles define how we want to make a difference for you and who we are as a company.

Where can you find us?

VAF Instruments has a world-wide network, with agents all around the globe. Over 70 representatives are most willing to serve you. Please feel free to contact us or one of our representatives, any time, any place.

Ready for the future

Reliable instruments to meet expectations

Not just today but every day for as long as your system is in operation. You need the latest technologies to compete in the marketplace. You need to be sure you have the most advanced, reliable and cost-effective technology available.

You expect a company to demonstrate its trust and its commitments to its clients by guaranteeing the quality of its products. You can expect more from VAF Instruments' products. We give a standard two year guarantee on all our products; the longest and most comprehensive guarantee in the maritime industry. This is also the reason we put so much effort in research & development; to meet your current and future needs.

Our continuous effort to innovate can be illustrated by our intensive cooperation with some of the most renowned research institutions in the Netherlands in the area of sensor technology, both from the academic world as well as from other industries. These include research institutions from the Twente University, TNO and even the aviation industry. Also, we invest 8% of our revenues into new product development and 60% of our revenue comes from products developed less than 4 years ago. Not many competitors can say the same.

This way we were able to develop the torsional vibration technology that eliminated all moving parts from the ViscoSense®. Innovations like these made VAF Instruments' viscosity system the most popular viscosity control system in the marketplace and until now over 50.000 systems were sold. It broke all records by being on board of 70% of all ships being built since 1960.

A growing environmental awareness has led to higher demands regarding the measurement of oil in water. For this we developed the light scattering technique of the Oilcon that makes extreme accuracy possible. The quest to improvement also led to the automatic window wash system that eliminates manual maintenance. In depth knowledge from manufacturing possibilities and our clients' processes has led to a long history of innovation, dating back to the origin of VAF Instruments in 1938.

In fact VAF Instruments was the first to market several innovations. Always forward looking VAF Instruments has gained market leadership with its products and a world wide reputation of reliability and innovation.



VAF Instruments
offers measurement
and control systems
for the marine and
process industry.

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Viscosity

Viscosity measurement and control systems are used for continuous in-line measurement and control of viscosity of many liquids. Specially designed for fuel oil applications, it is used for diesel engines on board of ships and in land based power plants. VAF Instruments' expertise in this field resulted in a unique patented, superior measuring principle; ViscoSense®.



ViscoSense®

ViscoSense® Measurement System

- Revolutionary viscosity measurement principle;
- Viscosity control of intermediate and heavy fuel oils for main and auxiliary diesel engines on board ships;
- Viscosity control in oil-fired electric power plants and other industrial applications using diesel engines on heavy or intermediate fuel oils;
- Increases combustion efficiency;
- Reduces internal engine fouling;
- Suitable for all types of fuel heaters;
- Accurate in-line viscosity measurement and electronic control of all kinds of liquids in industrial applications;
- Viscosity range: 0-25 mPa.s to 0-1000 mPa.s;
- Ex proof version available.
- Density

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Oil discharge

For the continuous on-line monitoring of discharge water during de-ballasting operations, VAF Instruments is one of world's main suppliers, offering the Oilcon® Mark 6M Oil Discharge Monitoring & Control system.



Oilcon®

Oilcon® Oil Discharge Monitoring System

The latest development in a long line of oil-in-water monitoring system is the Oilcon® Mark 6M. The Oilcon® Mark 6M has been designed, approved and recognised by all major classification societies in accordance with IMO MARPOL Resolution MEPC 108 (49). The system is designed to be compact and easy to install, with only 2 bulkhead penetrations required. Great attention has been paid to ensure the Mark 6M is the most compact and user friendly system to date.

Monitoring of:

- Dirty ballast/tank washing discharge;
 - Clean ballast discharge;
 - Segregated ballast discharge.
-
- Sample selection: up to 6 sample points;
 - Materials: AISI 316, brass;
 - Detection range: 0-1000 ppm.

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Liquid flow

VAF Instruments' positive displacement liquid flowmeters stand for accurate volumetric measurement of a wide range of liquids, from low-density LPG to high viscosity chemical and petroleum products. VAF Instruments' liquid flowmeters are used in continuous metering applications, fuel consumption measurement, in-line blending processes, as well as for batching applications, such as the filling of containers and storage tanks. VAF Instruments' range of products covers flow rates from 1 litre/hour up to 960 m³/hour.



Flowmeters

Series LoFlow[®], ProFlow, MidFlow[®], HiFlow[®] and AQ-Rate

The most accurate liquid flowmeters for marine and industrial applications.

Series LoFlow[®], ProFlow, MidFlow[®], and HiFlow[®] and AQ-Rate

The most accurate liquid flowmeters for marine and industrial applications.

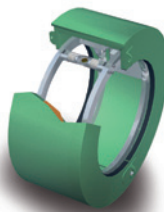
- Suitable for continuous metering operations, metered deliveries, consumption measurement, as well as for batching applications such as filling of drums and containers, and in mixing or reaction vessels;
- Body materials: ductile iron, carbon steel, stainless steel;
- Patented meter design;
- Designed to CE standards;
- ISO 9001 quality assurance;
- Accuracy from $\pm 0.1\%$ dependent on flow conditions / applications;
- Reproducibility better than $\pm 0.05\%$;
- Low pressure drop;
- Wide viscosity range;
- Local and/or remote registration;
- A wide variety of electronic instrumentation available.
- Mass flow measurement

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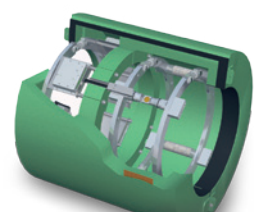
Shaft power

For the continuous measurement of the power transmitted by rotating shafts VAF Instruments offers the T-Sense[®] optical torque measuring system. The T-Sense[®] system is available for marine, as well as land based installations where monitoring of shaft power is required. The T-Sense[®] torque sensor can be installed and commissioned by the owner or shipyard. In combination with flowmeters and the PEM signal processing unit it makes the perfect efficiency monitor.

The TT-Sense[®] Thrust and Torque sensor can be applied on a propeller shaft or intermediate shaft aft of the thrust bearing. Monitoring of thrust will give you direct visual control of changes in hull and propeller fouling and trimming of the vessel.



T-Sense[®]



TT-Sense[®]

T-Sense[®] Torque measuring system

For torque measurement of engine-driven shafts and other rotating equipment the T-Sense[®] optical torque sensor can be supplied.

- Wireless system, power supply through induction principle, signal transmission through 2,4 GHz data transfer;
- Monitoring actual and average shaft power, torque and rpm;
- Able to detect torsional vibrations in the shaft line up to 50 Hz;
- Together with VAF Instruments' PT2 flowmeters an integrated efficiency monitoring system can be supplied, able to calculate and visualize specific fuel oil consumption, fuel consumption per NM and other efficiency indicators;
- Accuracy is within nanometer range.

TT-Sense[®] Thrust and Torque measuring system

In addition to above torque measuring system the TT-Sense[®] thrust and torque sensor will bring you:

- Continuous propeller thrust and hull condition monitoring;
- Pitch optimization and propeller cavitation detection;
- A full overview of the efficiency of your complete propulsion train and direct indication of the performance of your vessel's hull;
- Very high accuracy and repeatability regarding thrust measurements.

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Alarm units

For monitoring a wide range of sensors, process parameters and bridge activity, VAF Instruments is offering both digital and analogue Alarm Units as well as Bridge Navigational Watch Alarm System Units.

Key words related to these Alarm Units are easy installation and programming, reliability, competitive pricing and class approval.



Alarm Units / BNWAS

Alarm Units

- Bilge alarms;
- Generator (repeater) alarms;
- Tank measuring alarms;
- Water ingress alarms;
- Small alarm systems.

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System engineering

Experienced system engineers are available to design, along with the customer, a tailor-made solution for measurement and control problems. Examples are liquid batching systems, ratio control systems, stationary and mobile in-line blending systems. After installation the system engineer can bring the equipment into operation and arrange the training of personnel. VAF Instruments' quality control begins with the specific requirements of the customer and continues through all phases up to and including service during the economic life of the product. For further information contact VAF Instruments.



LoFlow®, MidFlow®, HiFlow®, Milliflow®, ViscoSense®, Oilcon®, T-Sense® and TT-Sense® are registered trade marks of VAF Instruments B.V.



Ready for the future.

VAF Instruments makes your promise come true. Not only for today, but long into the future.

For further information see relevant Product Bulletins or www.vaf.nl

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Specifications subject to change without notice.

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